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A SERIES

OF

ANATOMICAL SKETCHES

AND

DIAGRAMS,

WITH

DESCRIPTIONS AND REFERENCES.

BY

THOMAS WORMALD

Assistant Surgeon and Demonstrator of Anatomy at St. Bartholomew's Hospital.

AND

ANDREW MELVILLE McWHINNIE,

Teacher of Practical Anatomy at St. Bartholomew's Hospital, and late House Surgeon to that Institution.

LONDON:
SAMUEL HIGHLEY, 32, FLEET STREET.
1838.

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PREFACE.

During a considerable period we have been engaged in superintending the labours of Students in Practical Anatomy, and finding by experience how much their studies are facilitated, and their memories refreshed, by Sketches taken from Nature or by Diagrams made extemporaneously—observing also with what care they are copied and collected in their note books, we imagine that a Selection of Original Sketches and Diagrams, furnishing simple and clear views of the intricate parts of the Human Body will be acceptable and serve as an introduction to the more elaborate systems of Plates.

St. Bartholomew's Hospital,
April, 1838.

PLATE 1.

On the left side, are exhibited the Cerebral Nerves, in the order in which they pierce the Dura Mater, to reach their respective foramina, in the base of the skull.

A. The first Cerebral Nerve or Olfactory, with its bulb resting upon the Cribriform Plate of the Ethmoid bone.

B. The Second or Optic, divided after its decussation with the opposite nerve, and before it reaches the Foramen Opticum, where it is placed in front of the internal Carotid Artery, *f.*

C. The Third, or Motor Oculi, piercing the Dura Mater, to enter the Cavernous Sinus.

D. The Fourth, or Trochlearis, passing under the edge of the Tentorium, before the latter is attached to the Posterior Clinoid process.

E. The Fifth, or Trigeminus, piercing the Dura Mater posteriorly, and a little to the outer side of the Fourth.

F. The Sixth, or Abducens Oculi, penetrating the Dura Mater, opposite to the point where the apex of the petrous portion of the Temporal bone joins the Occipital.

G. The Seventh, consisting of,—*a* the Facial, *b* the Auditory, passing into the Meatus Auditorius Internus.

H. The Eighth, consisting of,—*c* the Glosso-Pharyngeal; *d* the Nervus Vagus; *e* the Nervus Accessorius, passing through the anterior part of the Foramen Jugulare. The Glosso-Pharyngeal generally has a distinct opening in the Dura Mater.

I. The Ninth, or Motor Linguæ, penetrating the Dura Mater in two, and sometimes more, distinct fasciculi, to pass through the Foramen Condyloideum Anterius.

On the right side, the Dura Mater is reflected from a part of the base of the skull, to show the relative situations of the several objects in the Cavernous Sinus; the roof, and also a portion of the outer wall of the Orbit have been removed to exhibit chiefly the distribution of the First or Ophthalmic branch of the Fifth Nerve.

Of the Nerves in the Cavernous Sinus, the Third, C., is the most internal — next we observe the Fourth Nerve, D., which, on entering the Orbit by the Fissura Lacera, passes over the Ophthalmic division of the Fifth. and is distributed to the Superior Oblique Muscle *k*. The Ophthalmic divison of the Fifth, lies still more externally in the Cavernous Sinus. The Sixth, F., is placed deeply between the Fourth and Ophthalmic division of the Fifth, and situated close to the Internal Carotid Artery *f*, as it emerges from the apex of the petrous portion of the Temporal bone.

E. The Ganglion Gasserianum of the Fifth pair dividing into :—

1. The Ophthalmic which enters the Orbit through the Fissura Lacera.

2. The Superior Maxillary, passing through the Foramen Rotundum.

3. The inferior Maxillary, passing through the Foramen Ovale. Close to the outer side of the Inferior Maxillary Nerve, is the Arteria Meningea Media, *i*, entering the skull through the Foramen Spinosum of the Sphenoid Bone.

The Ophthalmic dividing into—

4. The Nasal.

8. The Supra Orbitar or Frontal; and,

11. The Lachrymal.

The Nasal gives off two Ciliary Nerves, which have been separated, 5; The branch, 6, which passes through the Foramen Orbitale Internum Anterius, first into the Cranium, and then descends into the Nose, through an opening close to the base of the Crista Galli of the Ethmoid bone;* lastly, the Infra-Trochlear Nerve, 7.

The largest branch of the Ophthalmic is the Supra Orbitar or Frontal, 8, which gives off the Supra-Trochlear Nerve, 9, and branches, 10, which pass through the Supra Orbitar Notch or Foramen to the forehead.

The smallest division of the Ophthalmic is the Lachrymal, 11, which gives off the Malar Nerve, 12, branches to the Lachrymal Gland, *l*, 13, branches to the Eyelids, 14.

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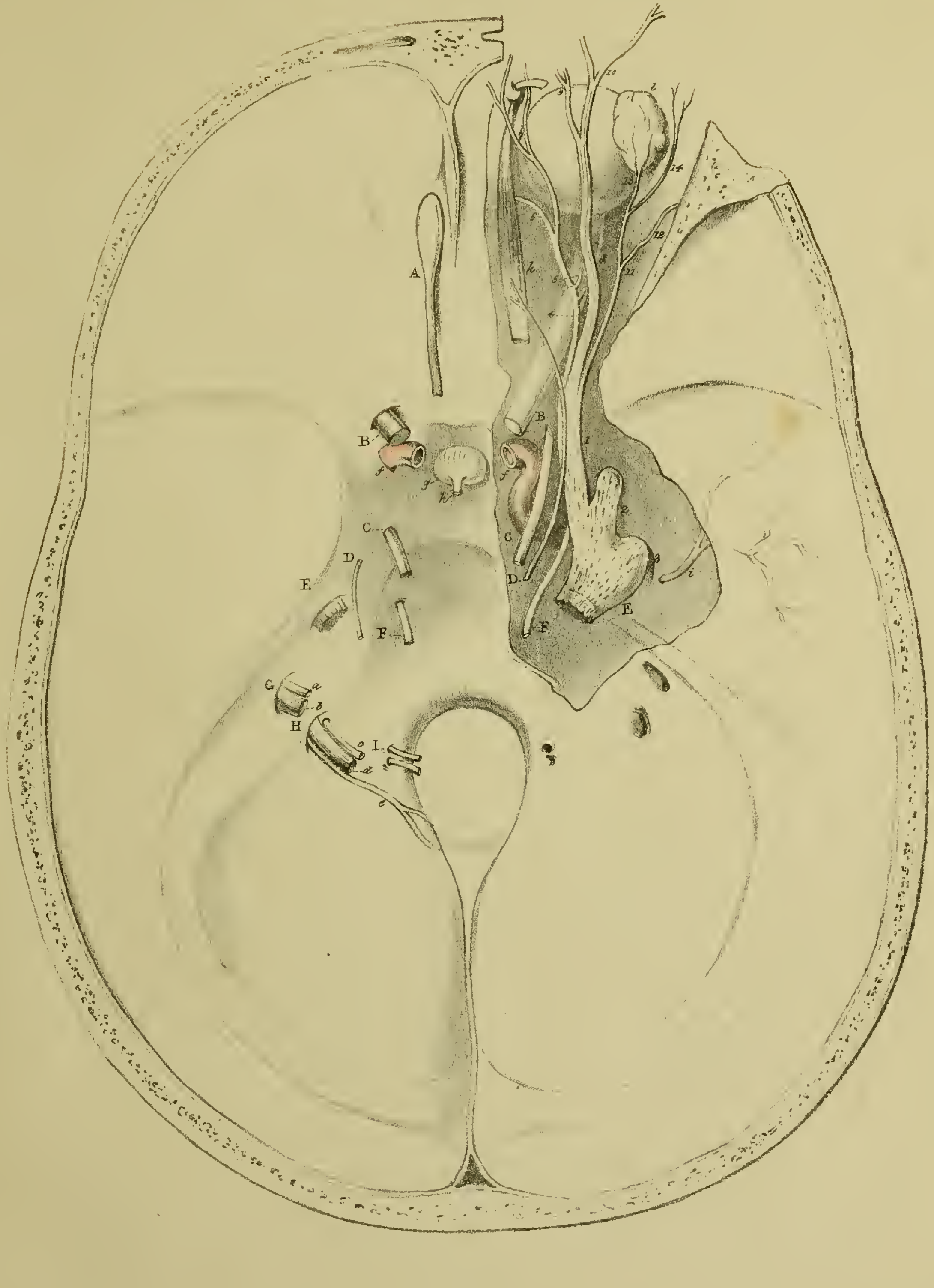
* Its termination is seen in Plates 2 and 3.

Plate 1.



A. M. McWhinnie ad nat. delt.

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PLATE 2.

Fig. 1.

The outer wall of the orbit has been removed for the purpose of exhibiting the connections of the Lenticular Ganglion, with one of the branches of the third pair, and with the Nasal branch of the Ophthalmic Division of the Fifth.

A. The Optic Nerve.
B. The Third, or Motor Oculi. All its branches have been divided close to the trunk, excepting that which is connected with the Lenticular Ganglion.
C. The Ganglion Gasserianum, in dotted outline.
D. The Lenticular Ganglion.
1. Branch of the Third Nerve which supplies the Levator Palpebræ superioris and the Rectus Superior Oculi.
2. Branch to the Rectus Internus.
3. Branch to the Rectus Inferior.
4. Branch to the Obliquus Inferior, *a*.
5. The Communication between the last named branch of the Third and the Lenticular Ganglion, D.
6. The Nasal Branch of the Fifth sending off, first, a branch of communication with the Lenticular Ganglion, D.
7. Two long Ciliary Nerves from the Nasal.
8. Some of the Ciliary Nerves from the Lenticular Ganglion. A portion of the sclerotic has been removed to shew two of them in their passage forward, between this tunic and the Choroid, to penetrate the Ciliary Ligament.
9. One of the ultimate branches of the Nasal Division of the Ophthalmic, emerging between the Nasal Bone and Cartilage to ramify upon the tip of the nose*.
10. The trunk of the Supra-orbitar Nerve.
11. The Lachrymal Nerve.
12. The Superior Maxillary.
13. The Inferior Maxillary, in dotted outline.

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* The other branches of the Nasal are represented in Plates 1 and 3.

Fig. 2.

Exhibits the Lachrymal Nerve, and the Second division of the Fifth, or the Superior Maxillary Nerve.

A. The Optic Nerve.

B. The Ganglion Gasserianum, in dotted outline.

C. The Superior Maxillary nerve,

D. The Spheno-Palatine Ganglion—or Ganglion of Meckel.

1. The Lachrymal nerve giving off,

2. Branch to the Lachrymal gland, *a*.

3. Malar nerve to join a branch from the Superior Maxillary.

4. Filament which passes through a foramen in the malar bone to the face

C. The Superior Maxillary nerve, which gives off

5. The Branch of communication with the Lachrymal, and which passes through the Pterygo-Maxillary Fissure.

6. Filaments descending to join the Spheno-Palatine Ganglion, D.

7. Posterior Dental Nerves, penetrating the foramina in the Tuberosity of the Superior maxillary bone, to supply the molar teeth.

8. Anterior Dental Nerve passing through a canal in the anterior wall of the Antrum, to supply the front teeth.

9. The continuation of the Superior Maxillary nerve, or Infra-Orbitar Nerve, emerging from the Infra-Orbitar Foramen, and dividing into a mesh of filaments, distributed to the face.

10. The Nasal Nerve.

11. The Supra-orbitar.

12. The Inferior Maxillary.

13. The Vidian.

14. Palatine Nerves.

Plate 2

Fig 1.

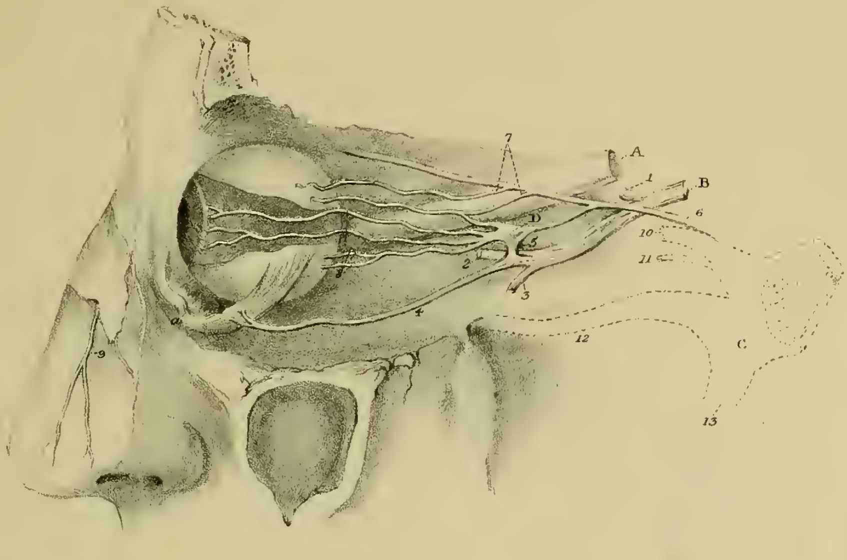

Fig 2.

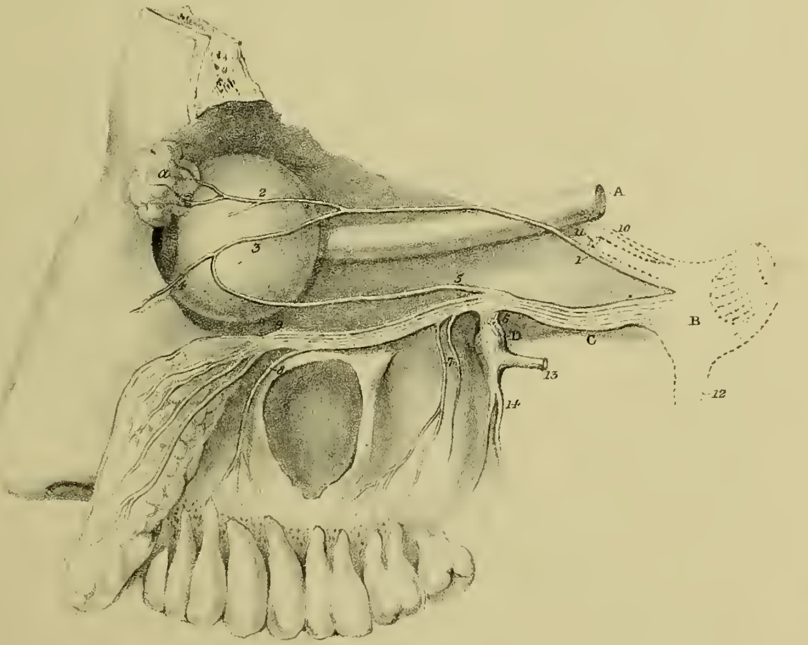

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PLATE 3.

Fig. 1

A vertical section of the skull to exhibit an internal view of the Spheno Palatine Ganglion, and some of its Branches,—also a part of the course of the Superior or Cranial division of the Vidian, and its connexions with the Gustatory Branch of the Fifth, and with the Portio Dura of the Seventh.

A. The Spheno Palatine Ganglion, or Ganglion of Meckel.

1. The filaments of connexion between the Spheno Palatine Ganglion, and the Superior Maxillary Nerve which have been divided.

2. The posterior Palatine Nerves.

3. The Spheno-Palatine or Nasal Nerves, divided.

4. The long Nasal Nerve, or Nerve of Cotunnius which passes under the body of the Sphenoid Bone, by the side of the Septum to the Foramen Incisivum.

5. One of the branches of the posterior Palatine Nerves which passes forwards along the roof of the mouth, to the Foramen Incisivum.

6. The Vidian Nerve which passes backwards through the canal at the base of the Pterygoid Process and divides into—

7. The Inferior or Carotid Branch which has been divided — its connexions are represented in the next figure.

8. The Superior or Cranial Branch which passes through the Foramen Lacerum basis Cranii Anterius to reach the anterior surface of the petrous portion of the Temporal Bone. Here it enters the Hiatus Fallopii to join—

B. The Portio Dura in the Aquæductus Fallopii.

9. The Chorda Tympani supposed to be a continuation of the Superior or Cranial branch of the Vidian 8, reflected back from the Portio Dura just before this nerve emerges from the Stylo-mastoid Foramen; it enters the Tympanum through the Foramen Chordæ, and is seen passing between the handle of the Malleus and the long process of the Incus.

10. The continuation of the Chorda Tympani after it has left the Cavity of the Tympanum through a small Foramen on the inner side of the Fissura Glasseri.

11. Junction of the Chorda Tympani with the Gustatory Branch of the Fifth, D, — its further course is given in Plate 5.

12. The Nasal Branch of the Fifth, which has entered the nose through one of the Foramina in the cribriform plate of the Ethmoid Bone, giving branches to the Septum and to the spongy bones, which are removed.

B. The Portio Dura.

C. The Inferior Maxillary, dividing into—

D. The Gustatory.

E. The Dental.

Fig. 2.

The outer wall of the Canalis Carotideus on the left side has been removed, to exhibit the Plexus formed around the Internal Carotid Artery by the communications between the Inferior or Carotid Branch of the Vidian, the Sixth nerve, and the Superior Cervical Ganglion of the Sympathetic.

A. The Internal Carotid Artery.

B. The Superior Cervical Ganglion of the Sympathetic.

C. The Sixth Nerve lying on the outer side of the Internal Carotid Artery in the Cavernous Sinus.

D. The Spheno-Palatine Ganglion.

1. The Vidian which passes through the Pterygoid Canal, in dotted outline.
2. The Superior, or Cranial Branch divided.
3. The Inferior or Carotid Branch.
4. The Branches of communication with the Sixth Nerve, which becomes enlarged after this junction.
5. Two branches of communication with the Sympathetic, B.
6. The Superior Maxillary Nerve in faint outline.

Plate 3.

Fig 1.

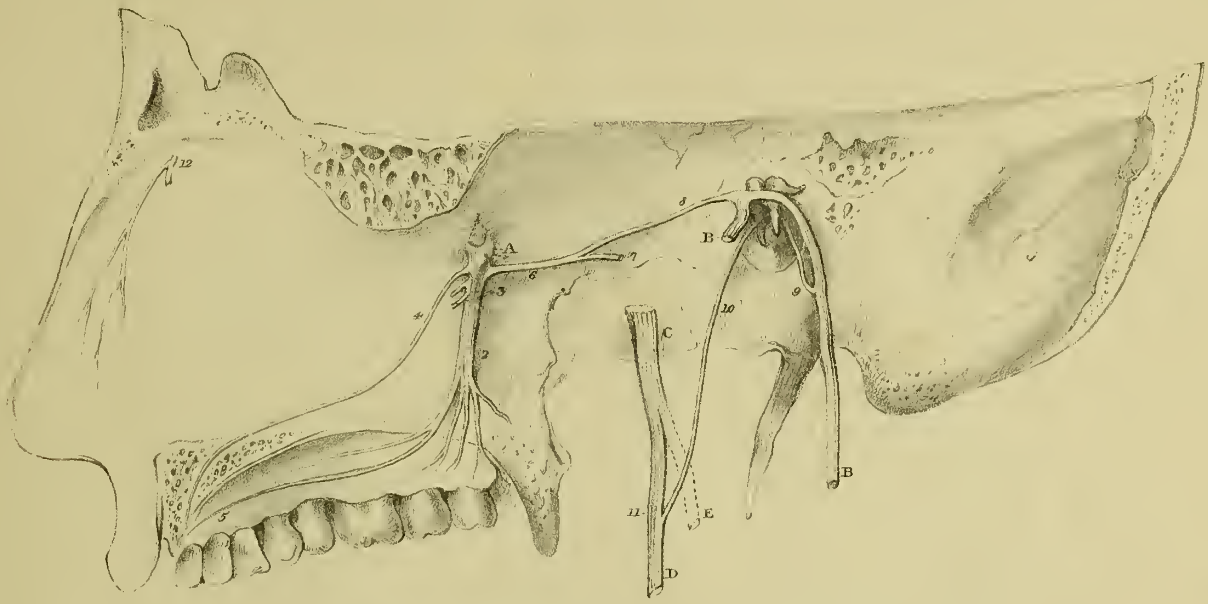

Fig 2.

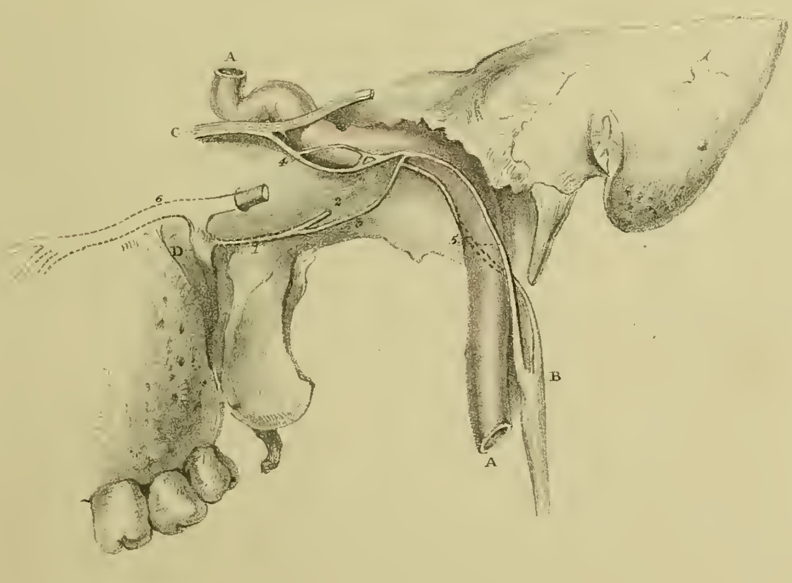

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PLATE 4.

Fig. 1.

Portions of the Temporal and of the Sphenoid bones have been removed for the purpose of bringing into view the distribution of the third division of the Fifth or Inferior Maxillary Nerve.

A. The Ganglion Gasserianum.
B. The Ophthalmic Division.
C. The Superior Maxillary.
D. The Inferior Maxillary.
E. The Pterygoideus-externus Muscle—some of the superficial fibres have been removed.
F. The Inter-articular Cartilage covering the condyle of the lower Jaw.
G. The Temporal Muscle
1. The Buccal-Nerve, giving off filaments to the Ptergoideus-externus muscle, 2.
3. Deep Temporal Nerve—distributing its branches to the Temporal Muscle.
4. Masseteric Nerve, passing between the condyle and the coronoid process of the lower jaw, giving off filaments, sometimes to the external Pterygoid and Temporal Muscles, and a branch to the Capsule of the lower jaw, 5.
6. The Temporo-Auricular Nerve, originating by two roots, between which the Arteria Meningea Media, *a*, is seen. This nerve passes between the neck of the lower jaw, and its internal lateral ligament.
7. The Dental Nerve.
8. The Gustatory.—The course and distribution of the last two nerves are given in Plate 5.

Fig. 2.

Part of the fossa of the left side, which supports the middle lobe of the brain, has been detached from the base of the Skull, for the purpose of exhibiting the parts in the Cavernous Sinus, and the two portions which compose the Fifth Nerve. In this view the bone is a little inclined to one side, and the Ganglion Gasserianum has been turned forwards from the anterior surface of the petrous portion of the Temporal bone, to show its under surface.

1. The Anterior Clinoid process of the left side.
2. The Posterior Clinoid process.
3. The point of the Petrous portion of the Temporal bone.
4. The aperture in the Dura Mater, through which the Fifth nerve passed.
5. The Foramen Spinosum.
6. The External Pterygoid plate.

A. The Optic Nerve,
B. The Internal Carotid Artery
C. The Third Cerebral Nerve.
D. The Fourth
E. The Sixth.
F. The larger portion of the Fifth, forming
G. The Gasserian Ganglion.
H. The smaller portion of the Fifth lying in a groove on the under surface of the Ganglion—it joins the Inferior Maxillary Nerve, 7.

8. The Ophthalmic Nerve.
9. The Superior Maxillary.

Plate 4.

Fig 1.

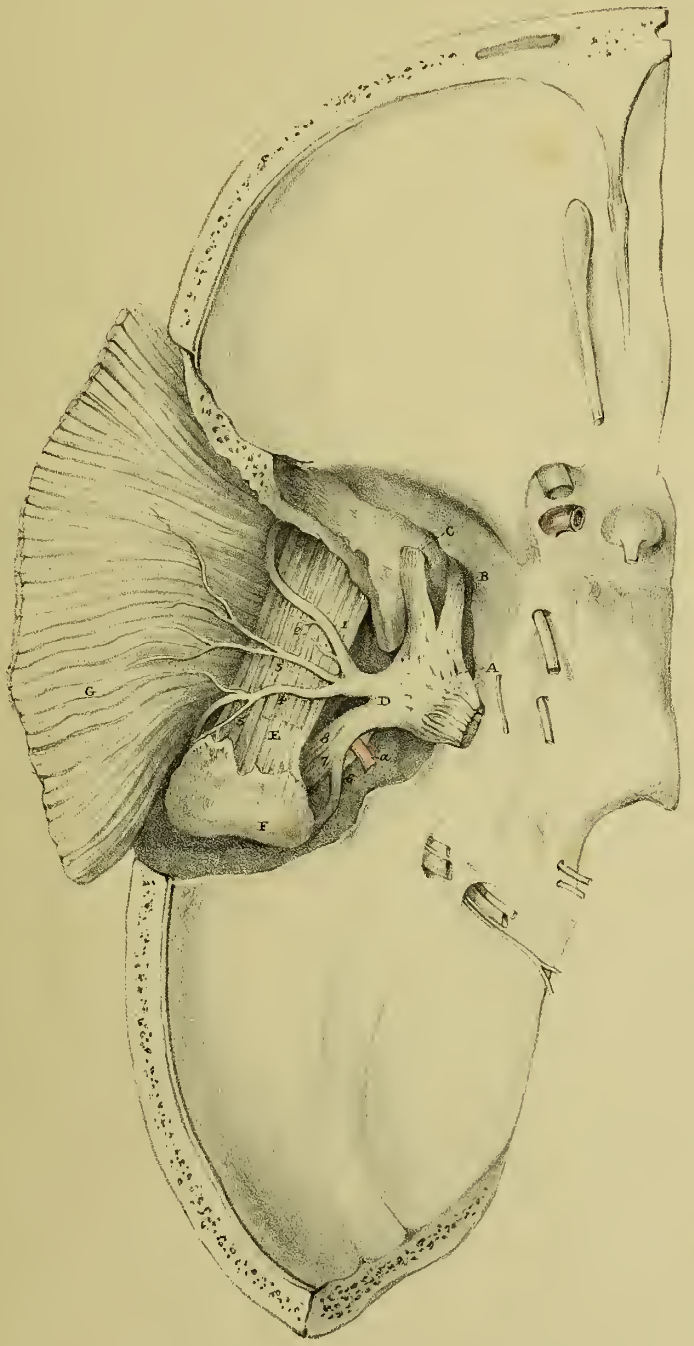

Fig 2

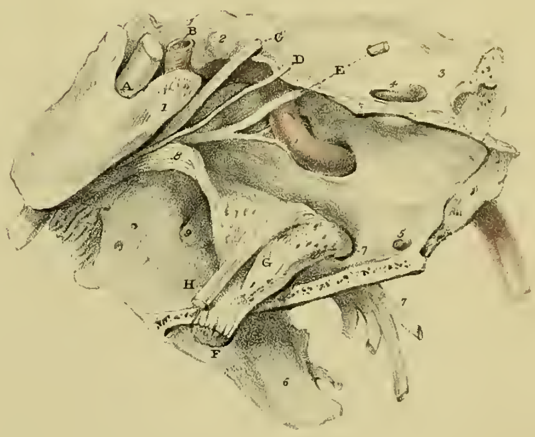

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PLATE 5.

Fig. 1.

A section of the Skull,—exhibiting an internal view, on the right side, of the Ganglion Gasserianum; the Otic and Submaxillary Ganglia,—and the course and distribution of the branches of the Inferior Maxillary Nerve, which were omitted in Plate 4.

The right half of the Tongue has been separated from its connection with the Os Hyoides, and lies between the cheek and the teeth.—The Genio-Hyglossus of that side is also separated from its connection with the Os Hyoides and the lower jaw, and raised by a hook.

A. The Ganglion Gasserianum,— *a*. the smaller portion of the Fifth.

B. The First division of the Fifth, or the Ophthalmic.

C. The Second Division, or the Superior Maxillary.

D. The Third Division, or the Inferior Maxillary.

E. The Otic Ganglion, connected with and placed on the inner side of the Inferior Maxillary Nerve, immediately below the Foramen Ovale. The Cartilaginous part of the Eustachian Tube has been removed, and the Circumflexus Palati, *b*, has been divided to expose the Ganglion.—The Anterior Branches, 1, are for the supply of the Eustachian Tube, and the Circumflexus Palati Muscle.—The Posterior Filaments, 2, pass backwards to the Tympanum.

3. The Internal Pterygoid Nerve from the Third Division of the Fifth Pair passing down from beneath the Otic Ganglion.

4. The Gustatory Nerve joined by the Chorda Tympani, 5—the course of the former and of the Dental underneath the Pterygoideus Internus Muscle, is indicated by dotted lines. The Gustatory gives off—branches, 6, to the Submaxillary Ganglion, F, to the Submaxillary and Sublingual Glands, to the mucous membrane of the mouth, and to the apex and sides of the Tongue, 7.

F. The Submaxillary Ganglion connected with the Gustatory by the Filaments, 6,— with the termination of the Chorda Tympani, 8,— with the Sympathetic through the Medium of the Filaments, 9. Branches from the Ganglion, 10, are distributed to the Submaxiliary and Sublingual Glands.

11. The Dental Nerve giving off the Mylo-hyoidean Branch, which is represented by dotted outline in the situation where it passes through the groove on the inner side of the Ramus of the lower jaw. The Dental is then continued onwards in its canal and supplies the whole of the lower teeth; its final termination is seen in Fig. 2.

Fig. 2.

Is a plan of the Fifth Cerebral Nerve of the right side.

A. The Ganglion Gasserianum, *a*, The smaller portion of the Fifth Nerve.

B. The Lenticular Ganglion.

C. The Spheno-Palatine Ganglion.

D. The Submaxillary Ganglion.

E. A portion of the trunk of the Third Cerebral Nerve.

F. The First Division of the Fifth, or the Ophthalmic.

G. The Second Division, or the Superior Maxillary.

H. The Third Division, or the Inferior Maxillary.

F. The First Division of the Fifth, or Ophthalmic, dividing into the Lachrymal, the Supra-Orbitar, and the Nasal.

1. The Lachrymal, supplying the Lachrymal Gland, *b*, and giving off:—The Malar Nerve, 2, branches to the Palpebræ, 3.

4. The Supra-orbitar Nerve giving off: branches which pass through the Supra-Orbitar notch to the forehead, 5, and the Supra-Trochlear Nerve, 6.

7. The Nasal Nerve giving off first; the branch of connexion with the Lenticular Ganglion, 8; two long Ciliary Nerves, 9; the branch which may be considered as the continuation of the Nasal itself, and which passes through the Foramen Orbitale Internum Anterius to the nose, 11; the Infra Trochlear Nerve, 10.

The Lenticular Ganglion, B, is also seen to be connected with that branch of the Third supplying the Obliquus Inferior Oculi, 12,—Ciliary Nerves from the Ganglion, 13.

G. The Second Division, or the Superior Maxillary giving off—

14. The Malar Nerve, which joins the Malar branch of the Lachrymal.

15. Branches of communication with the Spheno-Palatine Ganglion.

16. Posterior Dental Nerves.

17. Anterior Dental Nerves.

18. Continued trunk dividing into infra-orbitar branches.

C. The Spheno-Palatine Ganglion.—The branches which originate from it are:—

Plate 5

Fig.1

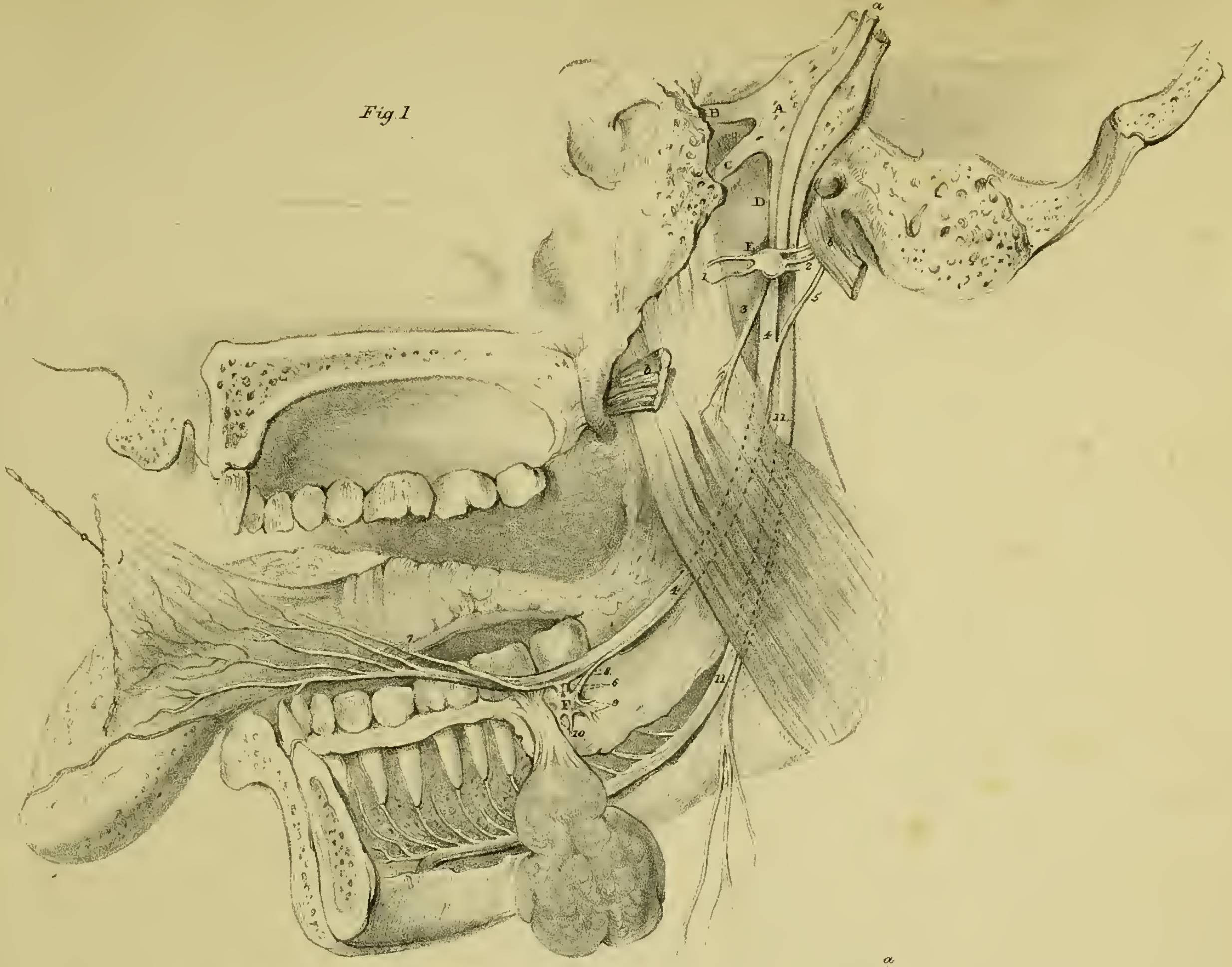
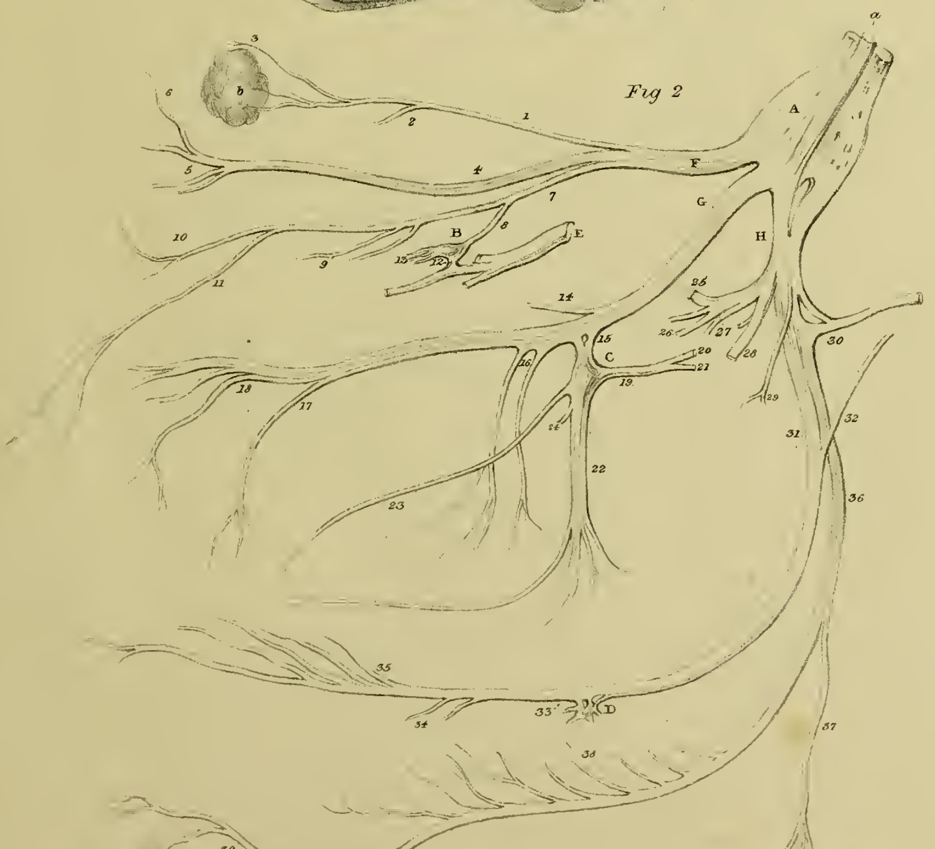


Fig 2



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19. The Vidian, which divides into the Superior or Cranial Branch, 20; the Inferior or Carotid Branch, 21.
22. Posterior Palatine Nerves.
23. Long Nasal or Nerve of Cotunnius.
24. Spheno-Palatine, or Nasal.
H. The Third Division of the Fifth, or the Inferior Maxillary Nerve, giving off—
25. The Masseteric.
26. The Temporal.
27. The External Pterygoid.
28. The Buccal.
29. The Internal Pterygoid.
30. The Temporo-Auricular.
31. The Gustatory, joined by the Chorda Tympani, 32, and furnishing branches to the Submaxillary Ganglion, 33, branches to the Salivary Glands, and Mucous Membrane of the Mouth, 34, branches to the Tongue, 35.
36. The Dental, giving off the Mylo-Hyoidean Branch, 37, and branches to the whole of the Teeth of the lower Jaw, 38. Continuation of the Dental through the Mental Foramen, 39.

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